

B. E. CONSTN. ENGINEERING 3RD YEAR 2ND SEMESTER EXAM. 2022**SUBJECT: ESTIMATING & PRICING****PART - I**

Full Marks : 40

Answer Q.1, Q.2 and any ONE from Q.3 and Q.4.

No. of Questions		Marks
Q.1.a)	What do you mean by notice inviting tender? Explain the meaning of the terms - earnest money and BOQ.	5
Q 1.b)	What is schedule of rates? Name some of these of various Govt. agencies. Are these rates fixed? If not, how frequently are these revised?	5

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No. of Questions		Marks
Q.2.	<p style="text-align: right; font-size: small;"> * ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED. * ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST CODES OF PRACTICE. * ALL MATERIALS AND WORKMANSHIP TO BE AS PER THE SPECIFICATIONS. * ALL DIMENSIONS ARE TO BE TAKEN TO THE CENTER LINE UNLESS OTHERWISE SPECIFIED. </p>	

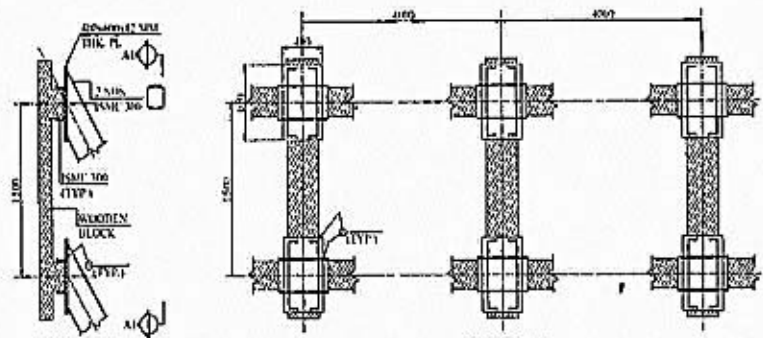
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Q.2.a)	From the above figures, determine the total quantity of earthwork in excavation and that in filling required.	6 + 2																							
Q.2.b)	What is the total quantity of PCC required?	3																							
Q.2.c)	Estimate the total quantity of MS work in fabrication required.	9																							
Q.3.	<p>The distance between Kurseong and New Jalpaiguri rail yard is approximately 75 km. The cost of carrying steel from the rail yard to hill for the first 5m is Rs. 82. For the next lengths, the carriage rates are provided in the table below.</p> <table border="1" data-bbox="598 1545 1141 1780"> <thead> <tr> <th colspan="3">Distance</th> <th rowspan="2">Carriage Rate</th> </tr> <tr> <th>From</th> <th>To</th> <th>Length</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>10</td> <td>5</td> <td>7.3</td> </tr> <tr> <td>10</td> <td>20</td> <td>10</td> <td>6.7</td> </tr> <tr> <td>20</td> <td>50</td> <td>30</td> <td>6.3</td> </tr> <tr> <td>50</td> <td>75</td> <td>25</td> <td>5.6</td> </tr> </tbody> </table>	Distance			Carriage Rate	From	To	Length	5	10	5	7.3	10	20	10	6.7	20	50	30	6.3	50	75	25	5.6	
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No. of Questions		Marks																
Q.3.a)	Estimate the total carriage cost for 1MT of steel.	7																
Q.3.b)	If the basic rate of structural steel plate is ₹ 45,500/=, calculate total cost of structural steel plate.	3																
Q.4.a)	Estimate the total cost of plain cement concrete from the data given below in the following table.	10																
	<table border="1"> <thead> <tr> <th>Size of aggregate</th> <th>Percentage (%)</th> <th>Volume</th> <th>Rate</th> </tr> </thead> <tbody> <tr> <td>20</td> <td>60</td> <td>0.54</td> <td>2205.00</td> </tr> <tr> <td>10</td> <td>40</td> <td>0.36</td> <td>2074.00</td> </tr> <tr> <td colspan="2">Add cost of cement supplied by agency in Kg</td> <td>400.00</td> <td>6.06</td> </tr> </tbody> </table>	Size of aggregate	Percentage (%)	Volume	Rate	20	60	0.54	2205.00	10	40	0.36	2074.00	Add cost of cement supplied by agency in Kg		400.00	6.06	
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B.E. CONSTRUCTION ENGINEERING THIRD YEAR SECOND SEMESTER EXAM 2022

Subject: Estimating & Pricing

**Full Marks: 60
Time: 3 hours**

Part-II

Instructions:

1. Answer All questions.
2. Illustrate your answers with neat sketches wherever necessary.
3. Figures to the right indicate full marks.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order

Q1. Estimate the quantities of the following items of two roomed (6.AA X 8.AA and 5.AA and 4.AA) Building. Assume wall thickness and other relevant data. (CO1)

- (a) Earthwork in excavation in foundation
- (b) Lime concrete in Foundation
- (c) 1st class brick work in cement 1:6 in foundation and plinth
- (d) 2.5cm cc dam proof courses and
- (e) 1st class brick work in superstructure. (15)

Q2. Analyze the importance of specifications with proper explanation in construction Industry. Write specification on ANY THREE items you feel most important in a building project. (CO4)

OR

- (a) Prepare Rate Analysis for
 - (i) 10 cum. RCC M20 slab.
 - (ii) 2.5 cm cement concrete floor 1:2:4
- (b) How to write a specification? Explain in detail (15)

Q3. Workout quantity of 6 mm, 10mm, and 16mm diameter reinforcement for a rectangular Beam of size 250mmx500mm. The beam is reinforced with 2 Nos-10mm dia. at top, 2Nos – 16mm dia. at bottom. 2 Nos.-16mm dia. bent up. 6mm dia. two legged stirrups are provided at 150 mm c/c throughout the length. Length of beam is 4.5 Assume suitable cover. (CO2)
(15)

Q4. Estimate the quantities of earthwork for a road with a formation width of 10.AAm and 1000 m long. The road has a falling gradient up to some distance and thereafter a rising gradient. Formulate the problem with all the relevant data so that volume of cutting and Volume of filling become equal or approximately become equal. (Maximum chainage distance 100 m may be considered). Also draw L-section and cross sections. (CO2)

OR

Prepare a detailed estimate for earthwork for a portion of a road from the following data Formation width of road is 8m, side slopes are 2.5:1 in banking and 1.5:1 in cutting. Draw L-section and cross sections. (15)

Distance in m	RL of ground	RL of Formation
0	114.50	115.0
100	114.75	Upward Gradient 1 in 2AA up to 600 m
200	115.25	
300	115.20	
400	116.10	
500	116.85	
600	118.0	Downward gradient 1 in 4AA
700	118.25	
800	118.10	
900	117.80	
1000	117.75	
1100	117.90	
1200	117.50	

AA = Last two digit of your Exam Roll no.